=> d his

(FILE 'HOME' ENTERED AT 09:22:31 ON 21 AUG 2003)
FILE 'CA' ENTERED AT 09:22:48 ON 21 AUG 2003
L1 9261 S COTTRELL OR COTRELL OR CHRONOAMP? OR (POTENTIAL OR VOLTAGE)(1A)(STEP OR INCREMENT?)
L2 298 S L1 AND(SENSOR OR DETECTOR OR BIOSENS? OR MICROSENS? OR MICRODETECT?)
L3 783 S L1 AND(NOIS? OR INTERFER? OR STRAY? OR EXTRA?)
L4 50 S L2 AND L3
L5 154 S L1 AND(NOIS? OR INTERFER? OR STRAY? OR EXTRA?)/TI,IT,ST
L6 129 S L1 AND(NOIS? OR INTERFER? OR STRAY? OR EXTRA?)(4A)(CURRENT OR VOLTAGE OR SIGNAL)
L7 31 S L5 AND L6
L8 4871 S (NOIS? OR INTERFER? OR STRAY? OR EXTRA?)(4A)(CURRENT OR VOLTAGE OR SIGNAL)AND(SENSOR OR DETECTOR OR BIOSENS? OR MICROSENS? OR MICRODETECT?)
L9 34006 S (NOIS? OR INTERFER? OR STRAY? OR EXTRA?)(4A)(COMPENSAT? OR REMOV? OR ELLIMINAT? OR SUBTRACT? OR CANCEL?)
L10 85 S L8 AND L9
FILE 'INSPEC' ENTERED AT 09:42:19 ON 21 AUG 2003
L11 14 S L4
L12 34 S L7
L13 22 S L9(10A)(CIRCUIT? OR LOOP)AND L8
FILE 'JICST-EPLUS' ENTERED AT 09:49:51 ON 21 AUG 2003
L14 1 S L11
L15 2 S L7
L16 1 S L13
FILE 'CA, INSPEC, JICST-EPLUS' ENTERED AT 09:51:37 ON 21 AUG 2003
L17 312 DUP REM L4 L6 L10 L11 L12 L13 L14 L15 L16 (26 DUPLICATES REMOVED)
L18 235 S L17 NOT(JOSEPHSON OR EXTRACELL? OR AXON OR MASS SPECTRO?)
L19 228 S L18 NOT(QUANTUM POINT OR HIPPOCAM? OR PWM OR MASS FLUX OR COLLIS?)
L20 210 S L19 NOT(UNDERWAT? OR NONDISPERS? OR RAYLEI? OR TOMOG? OR AUDIBLE OR DIODE)
L21 193 S L20 NOT(FTIR OR RADON OR INTERFEROM? OR HETERODYNE)
L22 155 S L21 NOT PY>2000
L23 11 S L21 NOT L22 AND PATENT/DT
L24 6 S L23 AND(REFERENCE OR HIGH FREQUENCY OR ELECTROMAGNETIC OR COMPENSAT?)
L25 140 S L22 NOT(BLACKOUT OR AVALANCHE OR ION CHANNEL OR WAVELENGTH)
L26 146 S L24-25

=> d bib,ab 1-146 l26

L26 ANSWER 22 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 129:197311 CA
TI High sensitivity multiple waveform voltammetric method and instrument
IN Champagne, Gilles Y.; Chevalet, Jean
PA Can.
SO PCT Int. Appl., 101 pp.
PI WO 9836270 A2 19980820 WO 1997-CA593 19970820
US 5980708 A 19991109 US 1997-798016 19970212
PRAI US 1997-798016 19970212
AB A high sensitivity multiple waveform voltammetric method and instrument are provided for use in electrochem. an other applications. The method consists of applying one or several variable potential excitation signals between electrodes of an electrochem. cell to produce an electrochem. reaction in the soln. The excitation signals include a d.c. bias potential increasing cyclically by a **potential step** to form a potential staircase signal sweeping across a potential domain, and a no. of pulse trains either of opposite

polarity or shifted in potential per **potential step**. An elec. current derived from a diffusion flux of ions through the soln. is measured as a result of the applied excitation signal. The instrument is adapted to perform the method, and is provided with an accurate and low **noise signal** generator circuit, a circuit for reducing a double layer capacitive effect in the cell, a potentiostat having a virtual mass counter electrode, a feedback circuit for compensating an ohmic drop in the cell, and an integrator circuit for integrating the current signal produced by the cell.

L26 ANSWER 41 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 124:81026 CA
TI The use of differential measurements with a glucose **biosensor** for **interference compensation** during glucose determinations by flow injection analysis
AU McGrath, Michael J.; Iwuoha, Emmanuel I.; Diamond, Dermot; Smyth, Malcolm R.
CS School of Chemical Sciences, Dublin City University, Dublin, Ire.
SO Biosensors & Bioelectronics (1995), 10(9/10), 937-43
AB A novel detection system for the detn. of glucose in the presence of clin. important interferents, based on the use of dual **sensors** and flow-injection anal. (FIA), is described. The normalization methodol. involves measurement of the **interference signal** at a ref. **sensor**: this signal can then be subtracted from the glucose **sensor** signal (post-run) to give a cor. measurement of the glucose concn. The detection system consists of thin layer cell with dual glassy carbon working electrodes. One electrode was surface modified to act as a glucose **biosensor** by immobilization of glucose oxidase (GOx) (from Aspergillus niger) with 1% glutaraldehyde and bovine serum albumin. The second electrode (glucose oxidase omitted) was utilized to measure the **interference signal** responding only to electroactive species present in the injected sample. A computer controlled multichannel potentiostat was used for potential application and current monitoring duties. The **sensor** responses were saved in ASCII format to facilitate post-run anal. in Microsoft Excel. Cyclic voltammetry (CV) was utilized to investigate the manner in which the **interference signal** contributed to the total signal obtained at the **biosensor** in the presence of glucose. The kinetic parameters Imax and the apparent Michaelis-Menten const., K'm, were calcd. for the **sensor** operating under flow-injection conditions.

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L26 ANSWER 53 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 119:221121 CA
TI Device for measuring concentration
IN Ogura, Kenji
PA Toto Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
PI JP 05188037 A2 19930727 JP 1992-25668 19920116
PRAI JP 1992-25668 19920116
AB The device (e.g. **biosensor**) comprises a sensing element measuring the analyte and its interference substances (e.g. ascorbic acid, uric acid, and bilirubin when detg. glucose with glucose oxidase), sensing element(s) measuring the interference substance(s), and a means to **subtract** the **interference signal** from the total **signal** for calibrating the concn. of analyte. Thus, a glucose **biosensor** contg. layers of glucose oxidase, ascorbic acid oxidase, uricase, and bilirubin oxidase is used for glucose concn. detn. in urine. A diagram of the device is presented.

L26 ANSWER 55 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 119:36216 CA
TI Mathematical modeling of the **chronoamperometric** response of an array of rectangular microelectrodes

AU Kolev, Spas D.; Simons, Jo H. M.; van der Linden, Willem E.
CS Dep. Chem. Technol., Univ. Twente, Enschede, 7500 AE, Neth.
SO Analytica Chimica Acta (1993), 273(1-2), 71-80
AB A general math. model describing the response of an array of flat amperometric electrodes with arbitrary size and spatial distribution at the bottom of a measuring cell with rectangular walls and finite dimensions is outlined. It is based on the 3-dimensional diffusion equation with initial and boundary conditions corresponding to the phys. situation which was numerically solved by the implicit alternating-direction finite-difference method. The accuracy of the numerical soln. was confirmed by theor. and exptl. results obtained by other authors. By comparing the **chronoamperometric** curves of the individual electrodes and by examg. the spatial concn. distribution in the measuring cell conclusions can be drawn concerning the mutual influence of the individual electrodes for a given geometry of the array and the dimensions of the measuring cell. This will allow the designing of arrays and selecting the proper measuring cell dimensions resulting in minimal **sensor interferences**. **Chronoamperometric** curves show the time required for attaining quasi steady state and the corresponding current value. Illustrative examples are presented.

L26 ANSWER 95 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 91:114442 CA
TI Theoretical and experimental studies of the effects of charging currents in **potential-step** voltammetry
AU Miaw, Lee-Hua Lai; Perone, S. P.
CS Dep. Chem., Purdue Univ., West Lafayette, IN, 47907, USA
SO Analytical Chemistry (1979), 51(11), 1645-50
AB Digital simulations of current-time behavior in **potential-step chronoamperometry** and in staircase voltammetry were made which take into account the effects of **potential-step** charging currents as well as induced charging currents. Results revealed serious distortions of the current signals before 4 cell-time consts. and significant **interference** from the induced charging **current** attimes between 4 cell-time consts. and 30 cell-time consts. The theor. predictions were verified exptl., and the possibility of **extg**. pure faradaic **current** from the measured signals was explored.

L26 ANSWER 105 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 80:45334 CA
TI Polarographic enzyme electrode for the measurement of oxidase substrates
AU Clark, Leland C., Jr.
CS Div. Neurophysiol., Child. Hosp. Res. Found., Cincinnati, OH, USA
SO Oxygen Supply, Workshop Oxygen, Hydrogen Enzyme Polarogr. (1973), Meeting Date 1971, 120-8. Editor(s): Kessler, Manfred. Publisher: Univ. Park Press, Baltimore, Md.
AB By combining peroxidase-generating enzymes with the polarographic anode, a new series of anal. oxidoreductase electrodes were devised, and several designs of such electrodes are described. The O oxidoreductase is held very near the active surface of the Pt anode by a substrate-permeable membrane, and enzymes which destroy or use H2O2 are excluded by the membrane. The H2O2 generated as a product of the enzymic reaction of the substrate being measured causes a current flow which, under controlled conditions, is proportional to the concn. of the substrate. The O required by the enzyme electrode can be supplied from the sample side or can enter the reaction layer from the electrode side. Where interfering substances cannot be eliminated by sample diln. or pretreatment, it is possible to **subtract** the **interference current** from the total **current** by using an enzyme-free electrode. These are ~25 oxidoreductases which may be used in this

electrochem. system. Anode oxidase electrodes have been made using several oxidoreductases: glucose, L-amino acid, D-amino acid, alcohol, uric acid, xanthine, and galactose. Some of the uses and limitations are illustrated by a description of results obtained with the L-amino acid oxidase obtained from Crotalus adamanteus. Enzymes may be stabilized either singly or in combination to produce a wide variety of highly selective polarographic **sensors**.

L26 ANSWER 114 OF 146 CA COPYRIGHT 2003 ACS on STN
AN 64:30764 CA
OREF 64:5723b-c
TI Chronopotentiometer with compensation for **extraneous currents**
AU Shults, W. D.; Haga, F. E.; Mueller, T. R.; Jones, H. C.
CS Oak Ridge Natl. Lab., Oak Ridge, TN
SO Anal. Chem. (1965), 37(11), 1415-16
AB The results of chronopotentiometric expts. are complicated by the charging of the elec. double layers at the electrode-soln. interface, the electrolysis of minor and major components of the soln., and the electrolytic redn. or oxidn. of the electrode itself, all in addn. to the electroactive species of interest. These phenomena proceed at variable rates so that current efficiency for the desired electrode reaction is variable and difficult to calc. A novel method of compensating for most of the difficulties is described wherein a 2nd electrolytic cell, contg. everything except the ion in question, is placed in a new type of bridge circuit with the anal. cell. An uncompensated chronopotentiogram for the redn. of Fe(CN)63- is shown in juxtaposition to a compensated one, along with an accompanying **chronoamperometric** curve. The uncompensated chronopotentiogram shows a curve with a gentle inflection at the end point while the compensated curve has a very sharp end point.

=> log y
STN INTERNATIONAL LOGOFF AT 10:42:22 ON 21 AUG 2003